DIRECT TESTIMONY

of

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Finance Department

Financial Analysis Division

Illinois Commerce Commission

Silverleaf Resorts, Inc.
Proposed Water Rates

Docket No. 01-0827

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Witness Identification

Q. Please state your name and business address.

A. My name is Sheena Kight. My business address is 527 East Capitol Avenue, Springfield, IL 62701.

Q. By whom are you employed and in what capacity?

A. I am employed by the Illinois Commerce Commission ("Commission") as a Financial Analyst in the Finance Department of the Financial Analysis Division.

Q. Please describe your qualifications and background.

A. In May of 1998, I received a Bachelor of Business degree in Finance and Marketing from Western Illinois University in Macomb, Illinois. I earned a Master of Business Administration degree, with a concentration in Finance, also at Western Illinois University in May 2001. I have been employed by the Commission in my present position since January of 2001.

Q. Please state the purpose of your testimony in this proceeding.

A. The purpose of my testimony is to present the overall cost of capital and to recommend a fair rate of return on rate base for Silverleaf Resorts, Inc. ("Company" or "Silverleaf ").

Cost Of Capital

Q. Please summarize your cost of capital findings.

A. The overall cost of capital for Silverleaf is 7.36%, as shown on Schedule 3.01.

Q. Why must one determine an overall cost of capital for a public utility?

A. Under the traditional regulatory model, the proper balance of ratepayer and shareholder interests occurs when the Commission authorizes a public utility a rate of return on its rate base equal to its overall cost of capital. If the authorized rate of return on rate base exceeds the overall cost of capital, then ratepayers bear the burden of excessive prices. Conversely, if the authorized rate of return on rate base is lower than the overall cost of capital, then the utility may be unable to raise capital at a reasonable cost. Ultimately, the utility's inability to raise sufficient capital would impair service quality. Therefore, ratepayer interests are served best when the authorized rate of return on rate base equals the overall cost of capital.

In authorizing a rate of return on rate base equal to the overall cost of capital, all costs of service are assumed reasonable and accurately measured. If unreasonable costs continue to be incurred, or if any reasonable cost of service component is measured inaccurately, then the allowed rate of return on rate base will not balance ratepayer and investor interests.

Q. Please define the overall cost of capital for a public utility.

A. The overall cost of capital for a public utility equals the sum of the costs of the components of the capital structure (i.e., debt, preferred and preference stock, and common equity) after weighting each by its proportion to total capital.

Cost of Common Equity

Q. How did you measure the investor-required rate of return on common equity for Silverleaf?

A. I measured the investor-required rate of return on common equity for Silverleaf with discounted cash flow ("DCF") and risk premium models. Since current market data is not available for Silverleaf, DCF and risk premium models cannot be applied directly to Silverleaf; therefore, I applied both models to water utility and public utility samples.[1]

Sample Selection

Q. How did you select your water sample?

A. I selected my water sample based on two criteria. First, I began with a list of all domestic corporations assigned an industry number of 4941 (i.e., water utilities)

[1] Hereafter referred to as *water sample* and *utility sample*, respectively.

within *Standard & Poor's ("S&P") Utility Compustat*. Second, I removed any company that had neither Zacks Investment Research ("Zacks") nor Institutional Brokers Estimate System ("IBES") long-term growth rates. The remaining companies, American States Water Company; Artesian Resources; California Water Service Group; Middlesex Water Company; Philadelphia Suburban Corporation; SJW Corp.; Southwest Water Company; and York Water Company, compose my sample.

Q. How did you select a utility sample comparable in risk to Silverleaf ?

A. A firm's market-required return on common equity is a function of its operating and financial risks. S&P business profile scores reflect the operating risk of a utility. S&P credit ratings reflect both the operating risk and financial risks of a utility. S&P focuses on industry characteristics as well as the company's competitive position and management. Utilities' business profiles are evaluated on a scale of one to ten. A rating of one denotes below average business risk. A rating of ten denotes above average business risk.[2] I used an S&P business profile score and credit rating for a typical water utility for the Company, since Silverleaf does not have either. I began with eleven water companies with S&P business profile scores listed on S&P *Utilities & Perspectives*.[3] Of these eleven water utilities, eight are assigned a business profile score of 3 and three are assigned a business profile score of 2. The average business profile score of the

[2] Standard & Poor's, *Corporate Ratings Criteria 2002,* www.standardandpoors.com/ratings, p 17.
[3] Standard & Poor's, *Utilities & Perspectives,* March 31, 2003, pp. 18-20.

thirteen water utilities is 2.73. The average credit ratings for the eleven water utilities is A+ with one company assigned a credit rating of AA; five companies assigned a credit rating of A+; three companies assigned a credit rating of A; and two companies assigned a credit rating of A-. From the average business profile score and credit rating, I concluded that a business profile score of 3 and a credit rating of A+ would be reasonable estimates for a typical water utility, and thus for Silverleaf.

To form the utility sample, I began with a list of all domestic publicly traded corporations assigned an industry number of 4911, 4922, 4923, 4924, 4931, or 4932, in the S&P *Utility Compustat II* database that had at least an S&P credit rating of 'A' and business profile score of 3. Next, I removed any company that lacked either Zacks or IBES growth rates. Finally, I eliminated any company that was in the process of being acquired by another company. The remaining companies, Consolidated Edison Inc.; Keyspan Corp.; Laclede Gas Co.; Nicor Inc.; Northwest Natural Gas Co.; Nstar; Piedmont Natural Gas Co; and WGL Holdings, compose my utility sample.

DCF Analysis

Q. Please describe DCF analysis.

A. For a utility to attract common equity capital, it must provide a rate of return on common equity sufficient to meet investor requirements. DCF analysis

establishes a rate of return directly from investor requirements. A comprehensive analysis of a utility's operating and financial risks becomes unnecessary in DCF analysis since the market price of a utility's stock already embodies the market consensus of those risks.

According to DCF theory, a security price equals the present value of the cash flow investors expect it to generate. Specifically, the market value of common stock equals the cumulative value of the expected stream of future dividends after each is discounted by the investor-required rate of return.

Q. Please describe the DCF model with which you measured the investor-required rate of return on common equity.

A. As it applies to common stocks, DCF analysis is generally employed to determine appropriate stock prices given a specified discount rate. Since a DCF model incorporates time-sensitive valuation factors, it must correctly reflect the timing of the dividend payments that stock prices embody. As such, incorporating stock prices that the financial market sets on the basis of quarterly dividend payments into a model that ignores the time value of quarterly cash flows constitutes a misapplication of DCF analysis.

The companies in both samples pay dividends quarterly; therefore, I applied a constant-growth DCF model that measures the annual required rate of return on common equity as follows:

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$$k = \frac{\sum_{q=1}^{4} D_{0,q}(1+g)(1+k)^{1-[x+0.25(q-1)]}}{P} + g.$$

where: P ≡ the current stock price;

$D_{0,q}$ ≡ the last dividend paid at the end of quarter q, where q = 1 to 4;

k ≡ the cost of common equity;

x ≡ the elapsed time between the stock observation and first dividend payment dates, in years; and

g ≡ the expected dividend growth rate.

That model assumes dividends will grow at a constant rate, and the market value of common stock (i.e., stock price) equals the sum of the discounted value of each dividend.

Q. How did you estimate the growth rate parameter?

A. Determining the market-required rate of return with the DCF methodology requires a growth rate that reflects the expectations of investors. Although the current market price reflects aggregate investor growth expectations, market-consensus expected growth rates cannot be measured directly. Therefore, I measured market-consensus expected growth rates indirectly with security analysts' growth rate forecasts.

Q. Please describe the published growth rate forecasts used for the firms in your samples.

A. I examined analysts' projected earnings growth rates in the March 19, 2003, edition of IBES and data provided by Zacks on April 2, 2003. IBES and Zacks summarize the earnings growth expectations of financial analysts employed by the research departments of investment brokerage firms. Both provide forward-looking, expectational estimates of earnings growth. The growth rate estimates from IBES and Zacks for each firm in my samples are presented on Schedule 3.02. For those companies with growth rate estimates from both sources, I averaged the IBES and Zacks growth rates.

Q. How did you measure the stock price?

A. A current stock price reflects all information that is available and relevant to the market; thus, it represents the market's assessment of the common stock's current value. I measured each company's current stock price with its closing market price from April 2, 2003. Those stock prices appear on Schedule 3.03.

Since stock prices reflect the market's expectation of the cash flows the securities will produce and the rate at which those cash flows are discounted, an observed change in the market price does not necessarily indicate a change in the required rate of return on common equity. Price changes may reflect an investor re-evaluation of the expected dividend growth rate. In addition, stock prices change with the approach of dividend payment dates. Consequently, when estimating the required return on common equity with the DCF model, one

should measure the expected dividend yield and the corresponding expected growth rate concurrently.

Q. Please explain the significance of the column titled "Next Dividend Payment Date" shown on Schedule 3.03.

A. Estimating year-end dividend values requires measuring the length of time between each dividend payment date and the first anniversary of the stock observation date. For the first dividend payment, that length of time is measured from the "Next Dividend Payment Date." Subsequent dividend payments occur in quarterly intervals.

Q. How did you estimate the next four expected quarterly dividends?

A. Most utilities declare and pay the same dividend per share for four consecutive quarters before adjusting the rate. Consequently, I assumed the dividend rate will adjust during the same quarter it changed during the preceding year. If the utility did not change its dividend during the last year, I assumed the rate would change during the next quarter. The expected growth rates were applied to the current dividend rate to estimate the expected dividend rate. Schedule 3.03 presents the current quarterly dividends. Schedule 3.04 presents the expected quarterly dividends.

Q. Based on your DCF analysis, what is the estimated required rate of return on common equity for the water sample and the utility sample?

A. The DCF analysis estimates the required rate of return on common equity is 9.90% for the water sample and 10.45% for the utility sample, as shown on Schedule 3.05. Those estimates are derived from the growth rates from Schedule 3.03, the stock price and dividend payment dates from Schedule 3.03, and the expected quarterly dividends from Schedule 3.04.

Risk Premium Analysis

Q. Please describe the risk premium model.

A. The risk premium model is based on the theory that the market-required rate of return for a given security equals the risk-free rate of return plus a risk premium associated with that security. A risk premium represents the additional return investors expect in exchange for assuming the risk inherent in an investment. Mathematically, a risk premium equals the difference between the expected rate of return on a risk factor and the risk-free rate. If the risk of a security is measured relative to a portfolio, then multiplying that relative measure of risk and the portfolio's risk premium produces a security-specific risk premium for that risk factor.

The risk premium methodology is consistent with the theory that investors are risk-averse. That is, investors require higher returns to accept greater exposure

to risk. Thus, if investors had an opportunity to purchase one of two securities with equal expected returns, they would purchase the security with less risk. Conversely, if investors had an opportunity to purchase one of two securities with equal risk, they would purchase the security with the higher expected return. In equilibrium, two securities with equal quantities of risk have equal required rates of return.

The Capital Asset Pricing Model ("CAPM") is a one-factor risk premium model that mathematically depicts the relationship between risk and return as:

$$R_j = R_f + \beta_j \times (R_m - R_f)$$

where: R_j ≡ the required rate of return for security *j*;

R_f ≡ the risk-free rate;

R_m ≡ the expected rate of return for the market portfolio; and

β_j ≡ the measure of market risk for security *j*.

In the CAPM the risk factor is market risk, which is defined as risk that cannot be eliminated through portfolio diversification. To implement the CAPM, one must estimate the risk-free rate of return, the expected rate of return on the market portfolio, and a security or portfolio-specific measure of market risk.

Q. How did you estimate the risk-free rate of return?

A. I examined the suitability of the yields on three-month U.S. Treasury bills and thirty-year U.S. Treasury bonds as estimates of the risk-free rate of return.

Q. Why did you examine the yields on U.S. Treasury bills and bonds as measures of the risk-free rate?

A. The proxy for the nominal risk-free rate should contain no risk premium and reflect similar inflation and real risk-free rate expectations to the security being analyzed through the risk premium methodology.[4] The yields of fixed income securities include premiums for default and interest rate risk. Default risk pertains to the possibility of default on principal or interest payments. Securities of the United States Treasury are virtually free of default risk by virtue of the federal government's fiscal and monetary authority. Interest rate risk pertains to the effect of unexpected interest rate fluctuations on the value of securities.

Since common equity theoretically has an infinite life, its market-required rate of return reflects the inflation and real risk-free rates anticipated to prevail over the long run. U.S. Treasury bonds, the longest term treasury securities, were issued with terms to maturity of thirty years; U.S. Treasury notes are issued with terms to maturity ranging from two to ten years; U.S. Treasury bills are issued with terms to maturity ranging from four weeks to six months. Therefore, U.S. Treasury bonds are more likely to incorporate within their yields the inflation and real risk-free rate expectations that drive, in part, the prices of common stocks than either U.S. Treasury notes or Treasury bills.

[4] Real risk-free rate and inflation expectations comprise the non-risk related portion of a security's rate of return.

However, due to relatively long terms to maturity, U.S. Treasury bond yields also contain an interest rate risk premium that diminishes their usefulness as measures of the risk-free rate. U.S. Treasury bill yields contain a smaller premium for interest rate risk. Thus, in terms of interest rate risk, U.S. Treasury bill yields more accurately measure the risk-free rate.

Q. Given that the inflation and real risk-free rate expectations that are reflected in the yields on U.S. Treasury bonds and the prices of common stocks are similar, does it necessarily follow that the inflation and real risk-free rate expectations that are reflected in the yields on U.S. Treasury bills and the prices of common stocks are dissimilar?

A. No. To the contrary, short and long-term inflation and real risk-free rate expectations, including those that are reflected in the yields on U.S. Treasury bills, U.S. Treasury bonds, and the prices of common stocks, should equal over time. Any other assumption implies that the real risk-free rate and inflation is expected to systematically and continuously rise or fall.

Although expectations for short and long-term real risk-free rates and inflation should equal over time, in finite time periods, short and long-term expectations may differ. Short-term interest rates tend to be more volatile than long-term interest rates.[5] Consequently, over time U.S. Treasury bill yields are less biased (i.e., more accurate) but less reliable (i.e., more volatile) estimators of the long-

[5] Fabozzi and Pollack, ed., *The Handbook of Fixed Income Securities*, Fourth Edition, Irwin, p. 789.

term risk-free rate than U.S. Treasury bond yields. In comparison, U.S. Treasury bond yields are more biased (i.e., less accurate) but more reliable (i.e., less volatile) estimators of the long-term risk-free rate. Therefore, an estimator of the long-term nominal risk-free rate should not be chosen mechanistically. Rather, the similarity in current short and long-term nominal risk-free rates should be evaluated. If those risk-free rates are similar, then U.S. Treasury bill yields should be used to measure the long-term nominal risk-free rate. If not, some other proxy or combination of proxies should be found.

Q. What is the current yield on three-month U.S. Treasury bills and the current estimated yield on thirty-year U. S. Treasury bonds?

A. Three-month U.S. Treasury bills are currently yielding 1.13%. The estimated yield for Treasury bonds equals 5.13%.[6] Both estimates are derived from quotes for April 2, 2003.[7] Schedule 3.06 presents the published quotes and effective yields.

Q. Of the U.S. Treasury bill and bond yields, which is currently a better proxy for the long-term risk-free rate?

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[6] Since the suspension of the 30-year U.S. Treasury bond, the U.S. Treasury publishes a Long-Term Average Rate ("LTAR"), which represents the arithmetic average of the bid yields on all outstanding fixed-coupon securities with 25 years or more remaining to maturity. Additionally, the U.S. Treasury publishes daily linear extrapolation factors that can be added to the LTAR to estimate a 30-year rate. www.treas.gov/offices/domestic-finance/debt-management/interest-rate/ltcompositeindex.html

[7] The Federal Reserve Board, *Federal Reserve Statistical Release: Selected Interest Rates, H.15 Daily Update*, http://www.federalreserve.gov/releases/H15/update/, April 2, 2003.

A. In terms of the gross domestic product ("GDP") price index, the Energy Information Administration ("EIA") forecasts the inflation rate will average 2.5% annually during the 2003-2025 period.[8] In terms of the consumer price index ("CPI"), the *Survey of Professional Forecasters* ("*Survey*") forecasts the inflation rate will average 2.5% during the next ten years.[9] In terms of real GDP growth, EIA forecasts the real risk-free rate will average 3.1% during the 2003-2025 period. The *Survey* forecasts real GDP growth will average 3.2% during the next ten years.[10] Those forecasts imply a long-term, nominal risk-free rate between 5.7% and 6.0%.[11] Therefore, EIA and *Survey* forecasts of inflation and real GDP growth expectations suggest that the U.S. Treasury bond yield more closely approximates the long-term risk-free rate, currently. It should be noted, however, that the U.S. Treasury bond yield is an upwardly biased estimator of the long-term risk-free rate due to the inclusion of an interest rate risk premium associated with its relatively long term to maturity.

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[8] Energy Information Administration, *EIA 2002 Long-Term Forecast*, Table 20, Macroeconomic Indicators.

[9] *Survey of Professional Forecasters,* Federal Reserve Bank of Philadelphia, www.phil.frb.org/files/spf/survq202.html, February 24, 2003. The *Survey* aggregates the forecasts of approximately thirty forecasters.

[10] *Survey of Professional Forecasters,* Federal Reserve Bank of Philadelphia, www.phil.frb.org/files/spf/survq102.html, February 24, 2003.

[11] Nominal interest rates are calculated as follows:

$$r = (1 + R) \times (1 + i) - 1.$$

where: $r \equiv$ nominal interest rate;
$R \equiv$ real interest rate; and
$i \equiv$ inflation rate.

Q. Please explain why the real risk-free rate and the GDP growth rate should be similar.

A. Risk-free securities provide a rate of return sufficient to compensate investors for the time value of money, which is a function of production opportunities, time preferences for consumption, and inflation.[12] The real risk-free rate excludes the premium for inflation. The real GDP growth rate measures output of goods and services without reflecting inflation and, as such, also reflects both production opportunities and consumers' consumption preferences. Therefore, both the real GDP growth rate and the real risk-free rate of return should be similar since both are a function of production opportunities and consumption preferences without the effects of either a risk premium or an inflation premium.

Q. How was the expected rate of return on the market portfolio estimated?

A. The expected rate of return on the market was estimated by conducting a DCF analysis on the firms comprising the S&P 500 Index ("S&P 500") as of April 1, 2003. That analysis used dividend information reported in the April 2003 edition of *Standard & Poor's Security Owner's Stock Guide*[13] and April 1, 2003 closing market prices reported by the Chicago Board of Options Exchange. Firms not

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[12] Brigham and Houston, Fundamentals of Financial Management, 8th edition.

[13] Price information for Centerpoint Energy was obtained from www.cbsmarktwatch.com. Dividend information for Centerpoint Energy and Principal Financial Group was obtained from www.centerpoinenergy.com and www.principal.com , respectively.

paying a dividend as of April 1, 2003, or for which neither IBES nor Zacks growth rates were available, were eliminated from the analysis. The resulting company-specific estimates of the expected rate of return on common equity were then weighted using market value data from April 1, 2003 as published by the Chicago Board of Options Exchange. The estimated weighted average expected rate of return for the remaining 354 firms, composing 84.57% of the market capitalization of the S&P 500, equals 14.37%.

Q. How did you measure market risk on a security-specific basis?

A. Beta measures risk in a portfolio context. When multiplied by the market risk premium, a security's beta produces a market risk premium specific to that security. I used Value Line's beta estimates for all the companies in my samples and regression analysis to determine the beta estimate for my samples.

The Value Line beta for a security is estimated with the following model using an ordinary least-squares technique:[14]

$$R_{j,t} = a_j + \beta_j \times R_{m,t} + e_{j,t}$$

where $R_{j,t}$ ≡ the return on security j in period t;
$R_{m,t}$ ≡ the return on the market portfolio in period t;
a_j ≡ the intercept term for security j;
β_j ≡ beta, the measure of market risk for security j; and
$e_{j,t}$ ≡ the residual term in period t for security j.

[14] Statman, Meir, "Betas Compared: Merrill Lynch vs. Value Line", *The Journal of Portfolio Management*, Winter 1981.

A beta can be calculated for firms with market-traded common stock. Value Line calculates its betas in two steps. First, the returns of each company are regressed against the returns of the New York Stock Exchange Composite Index ("NYSE Index") to estimate a raw beta. The regression analysis employs 260 weekly observations of stock price data. Then, an adjusted beta is estimated through the following equation:

$$\beta_{adjusted} = 0.35 + 0.67 \times \beta_{raw}.$$

The regression analysis estimate of beta for a security or portfolio of securities is estimated with the following model using an ordinary least-squares technique:

$$R_{j,t} - R_{f,t} = a_j + \beta_j \times (R_{m,t} - R_{f,t}) + e_{j,t}$$

Where $R_{j,t}$ ≡ the return on security j in period t;

$R_{f,t}$ ≡ the risk-free rate of return in period t;

$R_{m,t}$ ≡ the return on the market portfolio in period t;

a_j ≡ the intercept term for security j;

β_j ≡ beta, the measure of market risk for security j; and

$e_{j,t}$ ≡ the residual term in period t for security j.

Next, a beta estimate for both samples was calculated in three steps using regression analysis. First, the U.S. Treasury bill return is subtracted from the average percentage change in the two samples' stock prices and the percentage change in the NYSE Index to estimate each portfolio's return in excess of the risk-free rate. Second, the excess returns of each of the two samples are regressed against the excess returns of the NYSE Index to estimate a raw beta.

The regression analysis employs sixty monthly observations of stock and U.S. Treasury bill return data. Third, an adjusted beta is estimated through the following equation:

$$\beta_{adjusted} = 0.33743 + 0.66257 \times \beta_{raw}.$$

Q. Why do you use an adjusted beta estimate?

A. I use an adjusted beta estimate for two reasons. First, betas tend to regress towards the market mean value of 1.0 over time; therefore, the adjustment represents an attempt to estimate a forward-looking beta. Second, empirical tests of the CAPM suggest that the linear relationship between risk, as measured by raw beta, and return is flatter than the CAPM predicts. That is, securities with raw betas less than one tend to realize higher returns than the CAPM predicts. Conversely, securities with raw betas greater than one tend to realize lower returns than the CAPM predicts. Adjusting the raw beta estimate towards the market mean value of 1.0 compensates for the observed flatness in the linear relationship between risk and return.[15] Securities with betas less than one are adjusted upwards thereby increasing the predicted required rate of return towards observed realized rates of return. Conversely, securities with betas greater than one are adjusted downwards thereby decreasing the predicted rate of return towards observed realized rates of return.

[15] Litzenberger, Ramaswamy and Sosin, "On the CAPM Approach to the Estimation of A Public Utility's Cost of Equity Capital," *Journal of Finance*, May 1980, pp. 375-376.

Q. What are the beta estimates for the water sample and the utility sample?

A. The Value Line beta estimates average 0.59 for the water sample and 0.66 for the utility sample. The regression beta estimates are 0.45 and 0.51, respectively. The average of the Value Line and regression beta estimates equals 0.52 for the water sample and 0.585 for the utility sample.

Q. What required rate of return on common equity does the risk premium model estimate for the two samples?

A. The risk premium model estimates a required rate of return on common equity of 9.94% for the water sample and 10.54% for the utility sample. The computation of those estimates appears on Schedule 3.06.

Cost of Equity Recommendation

Q. Based on your entire analysis, what is your estimate of the required rate of return on the common equity for Silverleaf ?

A. A thorough analysis of the required rate of return on common equity requires both the application of financial models and the analyst's informed judgment. An estimate of the required rate of return on common equity based solely on judgment is inappropriate. Nevertheless, because techniques to measure the required rate of return on common equity necessarily employ proxies for investor expectations, judgment remains necessary to evaluate the results of such

analyses. Along with DCF and risk premium analyses, I have considered the observable 6.65% rate of return the market currently requires on A-rated utility long-term debt.[16] Based on my analysis, in my judgment, the investor-required rate of return on common equity for Silverleaf is 10.21%.

Q. Please summarize how you arrived at the investor-required rate of return on common equity for Silverleaf .

A. The models from which the individual company estimates were derived are correctly specified and thus contain no source of bias. Moreover, I am unaware of bias in any of my proxies for investor expectations.[17] Consequently, estimates for a sample as a whole are subject to less measurement error than individual company estimates. I estimated the investor-required rate of return on common equity by: 1) averaging the DCF-derived estimates of the required rate of return on common equity, or 10.18%, 2) averaging the risk premium-derived estimates of the required rate of return on common equity, or 10.24%, and 3) taking the midpoint of the DCF and risk premium derived estimates, or 10.21%.

Cost of Long-Term Debt

Q. What is a reasonable cost of long-term debt for Silverleaf?

[16] Selection and Opinion, Value Line, April 4, 2003, p. 3043.
[17] Except as discussed above in regard to U.S. Treasury bond yields as proxies for the long-term risk-free rate.

A. As shown on Schedule 3.07, a reasonable cost of long-term debt for Silverleaf equals 4.86%.

Q. Please explain how you calculated a reasonable cost of long-term debt for Silverleaf.

A. Companies typically stagger debt maturities so that a large proportion of principal is not due within a limited time period. Concentrating debt maturities within a short time frame increases both liquidity risk[18] and interest rate risk. Therefore, rather than use an interest rate associated with a single term to maturity, I developed a weighted average from interest rates for debt securities with several different terms to maturity. That weighted average interest rate was calculated in three steps. First, the composition of long-term debt issuance maturities was established for a typical power company.[19] Schedule 3.07 shows that during 2002, 7% of all power company debt was issued with a term to maturity of 1-3 years; 13% with a term to maturity of 3-6 years; 60% with a term to maturity of 7-15 years; and 20% with a term to maturity of 20 or more years. Next, the cost for each maturity of long-term debt was ascertained by adding the A+ utility spread to the current interest rate on Treasury securities with matching maturities.[20]

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[18] Liquidity risk is the degree of uncertainty of raising needed cash at a reasonable cost and the consequences of failing to do so.

[19] Salomon Smith Barney, *Global Power Financing Activity 2002 Annual Review*, p. 3.

[20] Bondsonline, Reuters Corporate Spreads for Utilities, http://bondchannel.bridge.com/publicspreads.cgi?Utilities. The Federal Reserve Board, *Federal Reserve Statistical Release: Selected Interest Rates, H.15 Daily Update*, http://www.federalreserve.gov/releases/H15/update/, April 2, 2003.

Finally, the weighted average cost of debt was determined by multiplying the weight of each maturity of long-term debt by its corresponding cost.

Q. Why did you impute a cost of debt for Silverleaf?

A. Silverleaf restructured all of its debt in May of 2002. The restructured debt had an average term to maturity of five years.[21] Silverleaf's current embedded cost of debt is over 6%.[22] The cost of 5-year A+ rated utility debt on April 2, 2003 was 3.68%.[23] The increased cost of debt for Silverleaf is due to its higher-risk nonregulated businesses, land development and resort time shares.[24] Increased costs resulting from these unregulated businesses cannot be included in the cost of debt for its water and sanitary sewer services.

Section 9-230 of the Illinois Public Utilities Act ("Act") states that:

> In determining a reasonable rate of return upon investment for any public utility in any proceeding to establish rates or charges, the Commission shall not include any incremental risk or increased cost of capital which is the direct or indirect result of the public utility's affiliation with unregulated or non-utility companies. 220 ILCS 5/9-230.)

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21 Company response to Staff data requests SK 1.01.
22 Company response to Staff data requests SK 1.07.
23 The utility spread for 5-year A+ rated debt was added to interest rate on 5-year Treasuries. Bondsonline, Reuters Corporate Spreads for Utilities, http://bondchannel.bridge.com/publicspreads.cgi?Utilities. The Federal Reserve Board, *Federal Reserve Statistical Release: Selected Interest Rates, H.15 Daily Update*, http://www.federalreserve.gov/releases/H15/update/, April 2, 2003.
24 Amended Verified Petition, Docket No. 01-0827, January 28, 2003, p. 1.

Therefore, it would be inappropriate to base Silverleaf's cost of debt on its current embedded cost of debt, since that higher cost is due to its affiliation with unregulated or non-utility businesses.

Q. Why did you use debt issuances of power companies to calculate a cost of debt for Silverleaf?

A. I did not have access to the debt issuance activity of water utilities; however, since both water utilities and power companies invest in assets with long lives, the debt maturities of power companies is a reasonable proxy for the debt maturities of water utilities.

Capital Structure

Q. Does capital structure affect the overall cost of capital?

A. Yes. Financial theory suggests capital structure will affect the value of a firm and, therefore, its cost of capital, to the extent it affects the expected level of cash flows that accrue to third parties (i.e., other than debt and stock holders). Employing debt as a source of capital reduces a company's income taxes,[25] thereby reducing the cost of capital; however, as reliance on debt as a source of

[25] The tax advantage debt has over equity at the corporate level is partially offset at the individual investor level. Debt investors receive returns largely in the form of current income (i.e., interest). In contrast, equity investors receive returns in the form of both current income (i.e., dividends) and capital appreciation (i.e., capital gains). Taxes on capital gains are lower than taxes on interest and dividend income because capital gains tax rates are lower and taxes on capital gains are deferred until realized.

capital increases, so does the probability of bankruptcy. As bankruptcy becomes more probable, expected payments to attorneys, trustees, accountants and other third parties increase. Simultaneously, the expected value of the income tax shield provided by debt financing declines. Beyond a certain point, a growing dependence on debt as a source of funds increases the overall cost of capital. Therefore, the Commission should not determine the overall rate of return from a utility's actual capital structure if it determines that capital structure adversely affects the overall cost of capital.

An optimal capital structure would minimize the cost of capital and maintain a utility's financial integrity. Unfortunately, determining whether a capital structure is optimal remains problematic because (1) the cost of capital is a continuous function of the capital structure, rendering its precise measurement along each segment of the range of possible capital structures problematic; (2) the optimal capital structure is a function of operating risk, which is dynamic; and (3) the relative costs of the different types of capital vary with dynamic market conditions. Consequently, one should determine whether the capital structure is consistent with the financial strength necessary to access the capital markets under all conditions, and if so, whether the cost of that financial strength is reasonable.

Towards that end, I compared the Company's December 31, 2002 capital structure, which comprises 73.53% long-term debt and 26.47% common equity, to industry standards and my samples. S&P categorizes debt securities on the

basis of the risk that a company will default on its interest or principal payment obligations. S&P publishes financial targets that it uses in its analysis of the financial strength of investor-owned utilities.[26] The financial targets vary with the business profile score. The lower the numeric value of the business profile score (i.e., the lower the operating risk), the lower the financial target for a given credit rating. For example, the financial target for the ratio of total debt to total capital for an A rating ranges from 55% to 60.5% for the business profile score of 1 and ranges from 24.0% to 33.0% for the business profile score of 10. Thus, a company with a lower numeric value for the business profile score can carry a higher proportion of debt and still achieve a given credit rating than a company with a higher business profile score, all else equal. According to S&P, A-rated utilities with a business profile score of 3, should have a total debt to total capital ratio between 47.5% and 53.0%.[27]

The Water and Utility samples that share a typical water company's implied A+ credit rating have mean total debt ratios of 53.06% and 53.24%, respectively.[28] The corresponding standard deviations are 6.13%. and 6.80%.[29] Thus, Silverleaf's December 31, 2002 debt ratio is three or more standard deviations above the average for both samples. The mean common equity ratio for the Water and Utility samples equals 46.21% and 44.82%, respectively. The above numbers are shown in Table 1 below for comparative purposes.

[26] Standard & Poor's, "Utility Financial Targets are Revised," June 18, 1999.
[27] Standard & Poor's, "Utility Financial Targets are Revised," June 18, 1999.
[28] *S & P Utility Compustat*.
[29] *S & P Utility Compustat*.

TABLE 1: Capital Structure Ratios

	Water Sample		Utility Sample		Silverleaf December 31, 2002
	Mean	Standard Deviation	Mean	Standard Deviation	
Debt Ratio	53.07%	6.13%	53.24%	6.80%	73.53%
Equity Ratio	46.21%	6.38%	44.82%	6.31%	26.47%

Silverleaf's December 31, 2002 capital structure contains far more debt and thus is exposed to a higher degree of financial risk than a comparable water company. The capital structures of S&P's A-rated utilities are not nearly so risky. Therefore, I recommend imputing a capital structure consisting of 53.16% long-term debt and 46.84% common equity, as shown on Schedule 3.01.

Q. How did you derive Silverleaf's imputed capital structure?

A. To be consistent with the financial risk reflected in my recommended cost of common equity, the imputed capital structure for Silverleaf is based on the mean debt equity ratios of the Water and Utility samples. As Table 1 above shows, the mean long-term debt ratios for the Water and Utility sample are 53.07% and 53.24%, respectively. Therefore, I used the average of the two samples' debt ratios, or 53.16%, for Silverleaf's long-term debt ratio. Since preferred stock generally composes a relatively small proportion of capital, I excluded it from the capital structure. Common equity composes the remaining 46.84% of the capital structure.

Q. Should short-term debt be included in the capital structure of Silverleaf?

A. No. Short-term debt is not currently a source of financing for Silverleaf's rate base investments.

Q. How would the use of the Company's actual 2002 capital structure effect the costs of debt and equity that you have recommended?

A. The Company's actual 2002 capital structure is much weaker in terms of financial strength, and more consistent with speculative-grade debt with a B rating. In comparison, my cost of capital recommendation is based on the financial strength commensurate with an A+ rating. Use of Silverleaf's 2002 capital structure in determining the overall cost of capital would necessitate far higher costs of debt and equity to compensate investors for the additional risk associated with a B credit rating. For example, the corporate bond yield spreads for utilities with an A+ rating range from 40 basis points for a 1-year maturity to 121 basis points for a 30-year maturity.[30,31] The corresponding yield spreads for utilities with a B rating are 1215 and 1170 basis points, respectively.[32] Thus, the cost of debt would have to be increased by at least 1000 basis points to compensate for the increased risk associated with the Company's actual 2002

[30] The yield spreads cited above refer to the difference in interest rates between an A+-rated corporate debt instrument and a U.S. Treasury security with the same term to maturity. 100 basis points are equal to 1%.

[31] Bondsonline, Reuters Corporate Spreads for Utilities, http://bondchannel.bridge.com/publicspreads.cgi?Utilities.

[32] *Ibid.*

capital structure. The cost of common equity would increase as well; however, the precise amount is more difficult to determine.

Overall Cost of Capital Recommendation

Q. What is the overall cost of capital for Silverleaf in this proceeding?

A. As shown on Schedule 3.01, the overall cost of capital estimate for Silverleaf is 7.36%. My cost of capital recommendation of 7.36% incorporates a cost of common equity of 10.21%.

Q. Does this conclude your testimony?

A. Yes, it does.

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ICC Staff Exhibit 3.0
Schedule 3.01

Silverleaf Resorts, Inc.

Staff's Proposed Weighted Average Cost of Capital

Class of Capital	Percent of Total Capital	Cost	Weighted Cost
Long-Term Debt	53.16%	4.86%	2.58%
Common Equity	46.84%	10.21%	4.78%
Total	100%		7.36%

Silverleaf Resorts, Inc.'s Actual 2002 Capital Structure

Class of Capital	Balance	Percent of Total Capital
Long-Term Debt	$282,332,000	73.53%
Common Equity	$101,619,000	26.47%
Total	$ 383,951,000	100.0%

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ICC Staff Exhibit 3.0
Schedule 3.02

Silverleaf Resorts, Inc.

Growth Rates

Water Sample

	Company	Zacks Earnings	IBES Earnings	Average
1	American States Water Company	4.67%	4.00%	4.34%
2	Artesian Water Company	7.25%	7.25%	7.25%
3	California Water Service Group	5.00%	3.00%	4.00%
4	Middlesex Water Company	7.00%	7.00%	7.00%
5	Philadelphia Suburban Corp.	8.36%	8.50%	8.43%
6	SJW Corp.	4.00%	3.00%	3.50%
7	Southwest Water Company	8.50%	9.00%	8.75%
8	York Water Company	7.00%	7.00%	7.00%

Utility Sample

	Company	Zacks Earnings	IBES Earnings	Average
1	Consolidated Edison	3.33%	3.46%	3.40%
2	Keyspan Corp.	6.57%	7.10%	6.84%
3	Laclede Group	3.67%	4.00%	3.84%
4	Nicor Gas	4.90%	5.17%	5.04%
5	Northwest Natural Gas	4.67%	4.67%	4.67%
6	NSTAR	4.25%	5.60%	4.93%
7	Piedmont Natural Gas Company	4.50%	4.50%	4.50%
8	WGL Holdings Inc.	3.83%	4.33%	4.08%

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Schedule 3.03

Silverleaf Resorts, Inc.

Water Sample

	Company	Current Dividend $D_{0,1}$	$D_{0,2}$	$D_{0,3}$	$D_{0,4}$	Next Dividend Payment Date	Stock Price
1	American States Water Company	$ 0.217	$ 0.217	$ 0.221	$ 0.221	6/2/2003	$ 24.5800
2	Artesian Water Company	0.290	0.290	0.290	0.298	5/21/2003	30.1100
3	California Water Service Group	0.280	0.280	0.280	0.281	5/21/2003	26.0600
4	Middlesex Water Company	0.210	0.210	0.215	0.215	5/28/2003	22.3500
5	Philadelphia Suburban Corp.	0.132	0.132	0.140	0.140	6/2/2003	22.3200
6	SJW Corp.	0.690	0.690	0.690	0.728	6/2/2003	77.7500
7	Southwest Water Company	0.056	0.056	0.061	0.061	7/21/2003	12.5000
8	York Water Company	0.130	0.130	0.135	0.135	7/15/2003	16.9600

Utility Sample

	Company	Current Dividend $D_{0,1}$	$D_{0,2}$	$D_{0,3}$	$D_{0,4}$	Next Dividend Payment Date	Stock Price
1	Consolidated Edison	$ 0.555	$ 0.555	$ 0.555	$ 0.560	6/16/2003	$ 39.0000
2	Keyspan Corp.	0.445	0.445	0.445	0.445	5/1/2003	32.3900
3	Laclede Group	0.335	0.335	0.335	0.335	7/1/2003	23.9200
4	Nicor Gas	0.460	0.460	0.460	0.465	8/1/2003	27.8900
5	Northwest Natural Gas	0.315	0.315	0.315	0.315	5/15/2003	25.0900
6	NSTAR	0.530	0.530	0.530	0.540	5/1/2003	40.4500
7	Piedmont Natural Gas Company	0.400	0.400	0.400	0.415	7/15/2003	35.5300
8	WGL Holdings Inc.	0.317	0.317	0.317	0.317	5/1/2003	26.8400

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Schedule 3.04

Silverleaf Resorts, Inc.

Expected Quarterly Dividends

Water Sample

Company	$D_{1,1}$	$D_{1,2}$	$D_{1,3}$	$D_{1,4}$
American States Water Company	$ 0.221	$ 0.221	$ 0.231	$ 0.231
Artesian Water Company	0.298	0.298	0.298	0.320
California Water Service Group	0.281	0.281	0.281	0.292
Middlesex Water Company	0.215	0.215	0.230	0.230
Philadelphia Suburban Corp.	0.140	0.140	0.152	0.152
SJW Corp.	0.728	0.728	0.728	0.753
Southwest Water Company	0.061	0.061	0.066	0.066
York Water Company	0.135	0.135	0.144	0.144

Utility Sample

Company	$D_{1,1}$	$D_{1,2}$	$D_{1,3}$	$D_{1,4}$
Consolidated Edison	0.56	0.56	0.56	0.58
Keyspan Corp.	0.45	0.48	0.48	0.48
Laclede Group	0.35	0.35	0.35	0.35
Nicor Gas	0.47	0.47	0.47	0.49
Northwest Natural Gas	0.32	0.33	0.33	0.33
NSTAR	0.54	0.54	0.54	0.57
Piedmont Natural Gas Company	0.42	0.42	0.42	0.43
WGL Holdings Inc.	0.32	0.33	0.33	0.33

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Schedule 3.05

Silverleaf Resorts, Inc.

DCF- Cost of Common Equity Estimate

Water Sample

	Company	Cost of Equity Estimate
1	American States Water Company	8.14%
2	Artesian Water Company	11.50%
3	California Water Service Group	8.54%
4	Middlesex Water Company	11.19%
5	Philadelphia Suburban Corp.	11.17%
6	SJW Corp.	7.41%
7	Southwest Water Company	10.86%
8	York Water Company	10.41%
	Average	9.90%

Utility Sample

	Company	Cost of Equity Estimate
1	Consolidated Edison	9.41%
2	Keyspan Corp.	13.01%
3	Laclede Group	9.87%
4	Nicor Gas	12.02%
5	Northwest Natural Gas	10.13%
6	NSTAR	10.64%
7	Piedmont Natural Gas Company	9.37%
8	WGL Holdings Inc.	9.19%
	Average	10.45%

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Schedule 3.06

Silverleaf Resorts, Inc.

Risk Premium Analysis

Interest Rates as of April 2, 2003

U.S. Treasury Bills		U.S. Treasury Bonds	
Discount Rate	Effective Yield	Bond Equivalent Yield	Effective Yield
1.11%	1.13%	5.07%	5.13%

Risk Premium Cost of Equity Estimates*

Water Sample

Risk-Free Rate		Beta		Risk Premium		Cost of Common Equity
5.13%	+	0.520	*	(14.37% - 5.13%)	=	9.94%

Utility Sample

Risk-Free Rate		Beta		Risk Premium		Cost of Common Equity
5.13%	+	0.585	*	(14.37% - 5.13%)	=	10.54%

*Risk-Free Rate Proxy is the U.S. Treasury Bond

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ICC Staff Exhibit 3.0
Schedule 3.07

Silverleaf Resorts, Inc.

Cost of Debt

Components of Long-Term Debt	Treasury Maturity	Treasury Rate*	Yield Spread**	Cost of Debt	Percent of Total Long-Term Debt***	Weighted Cost
1-3-yrs	3-yrs	2.03%	0.53%	2.56%	7%	0.18%
3-5-yrs	5-yrs	2.89%	0.79%	3.68%	13%	0.48%
7-15-yrs	10-yrs	3.94%	0.99%	4.93%	60%	2.96%
20+ yrs	25+ yrs	5.02%	1.21%	6.23%	20%	1.25%
					Total Cost of Debt =	4.86%

* Federal Reserve Statistical Release 4/2/2003.
** Bondsonline, Reuters Corporate Bond Spread Utilities, 4/2/2003
*** Percent published in Salomon Smith Barney's Global Power Financing Activity 2002 Annual Review, p. 3.